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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/085,575   | 02/26/2002  | Robert Karl Goodman  | 67,008-037/S-5194   | 8919             |
| 26096  | 7590        | 02/22/2005           | EXAMINER            |                  |
| CARLSON, GASKEY & OLDS, P.C.<br>400 WEST MAPLE ROAD<br>SUITE 350<br>BIRMINGHAM, MI 48009 |             |                      | RODRIGUEZ, PAUL L   |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2125                |                  |

DATE MAILED: 02/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                      |  |
|------------------------------|------------------------|----------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>  |  |
|                              | 10/085,575             | GOODMAN, ROBERT KARL |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>      |  |
|                              | Paul L Rodriguez       | 2125                 |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-16 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/26/02</u> . | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

1. Claims 1-16 are presented for examination. Based upon the below restriction requirement, claims 1-5 are withdrawn from consideration and claims 6-16 are elected and presented for examination.

#### ***Election/Restrictions***

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-5, drawn to a method for reducing sensed physical variables, classified in class 700, subclass 34.
- II. Claims 6-16, drawn to a method, control system and computer readable medium for actively controlling vibration, classified in class 700, subclass 280.

3. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the vibration control only requires constraining a component but does not require the method for reducing a sensed physical variable as disclosed in invention I. The subcombination has separate utility such as constraining a variable in any computer based control system in the arts of manufacturing, robotics or mechanical system control that rely upon a sensed physical variable.

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4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with John E. Carlson on 2/16/05 a provisional election was made without traverse to prosecute the invention of group II, claims 6-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-5 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Information Disclosure Statement***

7. The information disclosure statement (IDS) submitted on 2/16/05, along with a courtesy copy to the Examiner, has been received and considered using the courtesy copy. However, because the official papers submitting the IDS have not yet been processed, an initialed copy of the PTO-1449 is not being provided with this office action. Examiner would like to also note that the third reference submitted on the IDS lists application 10/803,949, which should be 10/083,949. The Examiner will provide an initialed copy of the PTO-1449 in the next correspondence from the office

***Drawings***

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "140" has been used to designate both "interconnect" and "gearbox mounting feet". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

9. The drawings are objected to because figure 1 has reference number 134 and 140 are both drawn to the "interconnect" from 106 to 104. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to

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obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

The objection to the drawings will not be held in abeyance.

### ***Specification***

10. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the use of the term "said". Also, line 3 of the abstract uses the phrase "measured in said step a", this phrase, if proper (due to the word said) would lack antecedent basis in the abstract because there was not previous mention of a step a. Correction is required. See MPEP § 608.01(b).

11. The disclosure is objected to because of the following informalities: paragraph 11 line 7 refers to "vibration or sound source 102", previously 103. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

12. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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13. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention because the claim depends from itself.

***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 6, 10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Swinbanks (U.S. Pat 5,838,802). The claimed invention reads on Swinbanks as follows:

Swinbanks discloses a method, apparatus, system, medium for actively controlling vibration (abstract, col. 1 lines 43-60) including measuring ambient vibration (col. 2 lines 45-49, col. 5 lines 56-57), generating a first command signal based upon said vibration (col. 2 lines 50-59, col. 5 line 58 – col. 6 line 11) constraining a first component of the first command signal (col. 2 lines 60-63, col. 3 line 25 – col. 4 line 49, col. 6 lines 6-11, 21-25), determining a residual vibration resulting from the constraint of the first component (col. 2 line 64 – col. 3 line 5, col. 6 lines 45-46), generating a second command signal based upon said residual vibration (col. 6 lines 46-47). Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 6-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Southward et al (U.S. Pat 5,627,896) in view of Hodgson et al (U.S. Pat 5,526,292).

Southward et al teaches a method, system, and medium for actively controlling vibration (abstract, col. 4 line 57- col. 6 line 10) including measuring ambient vibration (col. 15 lines 56-57, generating a first command signal based upon said vibration measured (col. 15 lines 58-62), constraining a first component of the first command signal (col. 15 line 63 – col. 16 line 19), further includes the step of comparing said first component of the first command signal to a maximum allowable command signal (col. 5 lines 46-50, col. 6 lines 62-66, col. 7 lines 46-55, Gmax), further includes the step of reducing the first component to the maximum allowable command signal (col. 16 lines 1-19) and also teaches in the background of the invention that it is well known to determine a residual vibration resulting from the constraint of the first component (col. 2 lines 17-20) generating a second command signal based upon said residual vibration (col. lines 17-20, reference number '24). Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

Southward et al fails to teach activating a plurality of force generators based upon said constrained first component and said second command signal.

Hodgson et al teaches a method, system, and medium for actively controlling vibration (abstract, figure 11) measuring ambient vibration (reference number 11, 12) generating a first command signal based upon said vibration measured (col. 4 lines 32-40) determining a residual



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vibration resulting from the first component (col. 8 lines 60-63) generating a second command signal based upon said residual vibration (reference numbers 13, 14) and further including the activating a plurality of force generators based upon said constrained first component and said second command signal (reference number 50, plural actuators, figure 2, 11, col. 8 lines 13-41). Again any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

Southward et al and Hodgson et al are analogous art because they are both related to active vibration control.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the plurality of force generators of Hodgson et al in the active vibration and noise control of Southward et al because Hodgson et al teaches focusing actuator groups, permitting size, capability and the number of actuators to be optimized for an application (col. 1 lines 49-55), the system is effective for both vibration and audible or sound vibration energy (col. 1 lines 61-64) and the system can sense and cancel broadband signals (col. 2 lines 35-50).

### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Goodman (U.S. Pat 6,229,898) – discloses content that clearly anticipates claims 6, 7, 10, 13 and 14 of the instant application.

Shoureshi (U.S. Pat 5,629,986) – teaches a vibration control system that constrains control signals.

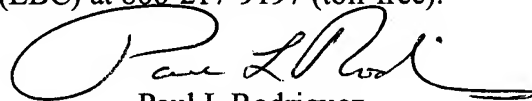
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Fukumizu (U.S. Pat 5,267,320) – teaches that it is well known in the art that residual noise is what remains after the cancellation signal is produced and that an error signal or residual vibration signal can be produced to reduce the residual noise too.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul L Rodriguez whose telephone number is (571) 272-3753. The examiner can normally be reached on 6:00 - 4:30 T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul L Rodriguez  
Primary Examiner  
Art Unit 2125

PLR  
2/17/05